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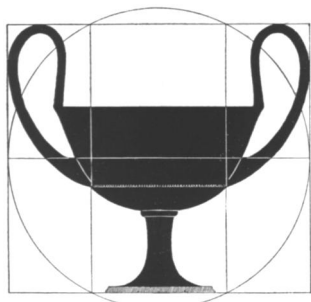
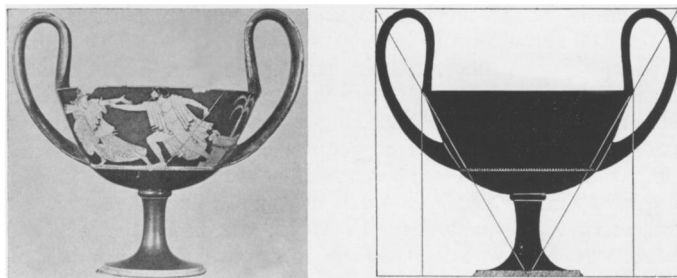
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*Geometrical Analysis of a Kantharos**Greek, fifth century; from the Museum Collection*

Geometry of Greek Vases

BY L. D. CASKEY

UNDER the above title the Museum is about to publish, as Volume V in the series of "Communications to the Trustees," a study of the proportions of the Attic black-figured and red-figured vases in the Museum in accordance with the geometrical principles set forth by Mr. Jay Hambidge in his book, "Dynamic Symmetry: The Greek Vase." In Mr. Hambidge's book a remarkable connection is traced between the proportions of Attic vases and those of certain rectangles derived from the square by a simple process which was familiar to Greek geometers. Mr. Hambidge finds that if the over-all proportion of a vase—that is, the ratio existing between its height and greatest width—is expressible in terms of one of these rectangles, then the heights and widths of all its parts can be expressed in terms of that rectangle, and of no other. The vase possesses symmetry in the sense that all its elements are commensurable, the common factor, or coördinating principle, being a rectangle whose sides illustrate one of the simple ratios $1:\sqrt{1}$, $1:\sqrt{2}$, $1:\sqrt{3}$, $1:\sqrt{5}$. Except for the first, these proportions are commensurable in square, but not in line; they can be studied in terms of geometry, but not in terms of arithmetic.

A simple illustration of these proportions is afforded by the drinking vessel (kantharos), from the factory of Brygos, which has long been recognized as one of the finest examples of Greek pottery in the Museum collection. The kantharos is in excellent preservation, except that one of the handles has been broken into several pieces and put together with some restoration in plaster, making it half a centimetre higher than the intact handle. A photograph of the vase is here reproduced, together with two diagrams illustrating the geometrical scheme. The first of these diagrams shows that if the diameter of the lower member of the bowl (emphasized by a ridge and a painted tongue pattern on a red ground) be taken as unity, then the total height of the vase equals 2 and its total width equals $\sqrt{5}$. The second diagram shows that the vase has the same proportions without its handles as it has with its handles ($2:\sqrt{5}$). The proportions of all the details can similarly be

expressed in terms of $\sqrt{5}$, within a margin of error which is in most cases less than a millimetre.

Mr. Hambidge's conception of Dynamic Symmetry as opposed to Static Symmetry deserves the most careful attention. It marks an epoch in the study of Greek design as the first comprehensive theory of that subject. In view of the greater development of geometry in ancient Greece as compared with arithmetic, the antecedent probabilities seem all in its favor. To some students, including Dr. Caskey, the theory has strongly appealed, and by others it is warmly opposed. The "Geometry of Greek Vases" aims, not to argue the case, but to aid in its intelligent discussion by providing a body of fact upon it, drawn from a branch of art in which the Greek genius signally manifested itself. G.

The Annual Report of the Museum for 1921

THE reports of the President and Director were distributed to the Annual Subscribers to the Museum late in January. The issue of the complete report is expected to follow shortly.

During the year just past the visitors to the Museum numbered 319,895. In 1920 they were 288,312, and in 1919, 280,187. These figures show a resumption since the war of the previous rate of growth in attendance. In the past ten years the number of visitors has increased nearly fifty per cent.

The number of Annual Subscribers to the Museum and the amount of annual subscriptions continued to increase during 1921. The subscribers were 2,890 and the subscriptions \$56,342.50. In 1920 the subscribers numbered 2,476 and the subscriptions \$51,878. The larger figures in 1921 may well be looked upon as proof that the awakened interest of the public in the Museum is not ephemeral, but permanent. It should be realized, nevertheless, that these subscriptions pay but about one-quarter the annual expenses of the Museum. The income of the Museum from all available sources fell short during 1921 by \$25,220.44 of meeting its current expenses. The deficit, like those of previous years, is to be attributed to the higher cost of living, especially the higher cost of coal and wages.

Unlike the museums of many other cities, the

Museum in Boston receives no support from City or State. Throughout its history it has been independent of public funds, and the new Constitution of the State forbids any such aid in future. The Museum has been developed organically in the past by the occasional gift or bequest of a large sum practically unrestricted; and must be developed in this way in future if it is to gain greatly in value and service. Bequests or gifts of six hundred thousand dollars would, at present rates, give an income sufficient to reduce the current deficits to nominal proportions. Yet a very much larger sum would be necessary to enable the Trustees to make even a limited selection of the great works of art that are currently submitted for their consideration—the exceptional opportunity of the present condition of the affairs of the world.

The acquisitions of the Museum during 1921 have been remarkable, both in number and in quality. The gifts of Dr. William Sturgis Bigelow, chiefly to the Chinese and Japanese Department and to the collection of Paintings, have filled a notable place in recent *Bulletins*. Dr. Denman W. Ross has continued his generosity of many years by the gift of objects of both Eastern and Western Art. The decoration of the dome of the Rotunda by Mr. John Singer Sargent, in progress since 1916, was unveiled on October 20, and the reception hall and central concourse of the building now offers an inspiring welcome to the visitor. A portrait of the Queen of Louis XIV, by Velasquez, long in the Imperial collection of Vienna, has been given by Mrs. Edwin Farnham Greene in memory of her parents. Mrs. W. Scott Fitz has added a beautiful painting of Salome, by Bernardino Luini, to her series of gifts of Italian masters. The Museum has acquired by purchase a Spanish Byzantine fresco of the eleventh century, formerly covering the apse of the Church of Santa Maria de Mur in Catalonia. On account of its size the fresco demands a special installation which is under consideration.

Mr. Carrington's resignation as Curator of the Print Department comes at the close of a year of unexampled growth in that Department. The acquisitions of prints during Mr. Carrington's curatorship have ended by making the Museum Collection first in America and second to but very few of the great collections of Europe.

The shipments from Egypt of the rich finds of the Harvard University-Museum of Fine Arts Expedition have continued during 1921, and more are expected during 1922. The work of installing the objects in the Egyptian galleries has been begun.

Instruction at the Museum by Docent guidance (to 5,989 persons), Sunday Talks, Wednesday Conferences and occasional lectures has proceeded as in previous years. School boys and girls to the number of 3,153 visited the Museum in classes under their own teachers. A gift from a generous friend permitted the resumption of Children's Story Hours in July and August. The groups were 87 in number, and included 4,801 children.

During 1921 a preliminary edition of a Catalogue of the Museum Collection of Paintings was published. The volume by Dr. Caskey entitled "The Geometry of Greek Vases" went to press in the closing weeks of the year.

The School of the Museum had, in 1921, 323 students, a substantial increase over the number for last year. The fees permitted of payments toward the deficits of war years and it is hoped may eventually permit of setting aside sums for the erection of the imperatively needed building.

Two free concerts were given in the Museum in April and May, with a total attendance of 5,318.

The Board of Trustees lost by death during 1921 Frank Victor Thompson, Superintendent of Schools. Mr. Jeremiah E. Burke succeeded to the office and ex-officio to the Trusteeship. In January Mr. T. Jefferson Coolidge was elected a Trustee to fill the vacancy occasioned by the death of Theodore N. Vail.

Wednesday Conferences

THE remaining Conferences of the season are as follows:

Classical Art. Dr. L. D. Caskey, Curator.

March 1. A Gold Libation Bowl of the Seventh Century B. C. from Olympia.

March 8. Dr. Caskey has asked Mrs. Charles H. Hawes to present at this Conference her new interpretation of the "Ludovisi Throne" and its companion piece in the Museum Collection.

March 15. Dynamic Symmetry as illustrated in the Museum Collection of Greek Vases.

Asiatic Art. Mr. John E. Lodge, Curator of Chinese and Japanese Art, and Dr. A. K. Coomaraswamy, Keeper of Indian Art and of Muhammadan Art: March 22, 29 and April 5, in the Chinese and Japanese Study.

The aim of each group is to study one of the Museum collections through its cultural sources. The Conferences are not planned as formal lectures devoting an hour to one topic or certain objects, but are held from 2.30 to 4.30 as discussions under the guidance of the officers.

The Conferences are open to the public without ticket.

Notes

DURING FEBRUARY the Museum will remain open until 4.30, and from March 1 until 5.

DR. ANANDA K. COOMARASWAMY, Keeper of the Collection of Indian Art at the Museum since its formation in 1917, has been appointed Keeper also of the collection of Muhammadan Art. This includes, among many other objects, textiles, pottery and manuscripts, the gift of Dr. Denman W. Ross, the remarkable Sultanabad bowl given by Mrs. J. Montgomery Sears, and the Golubew Collection of Miniatures, purchased in 1914.